

# Human–AI collaboration enables more empathic conversations in text-based peer-to-peer mental health support

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## Abstract

Advances in artificial intelligence (AI) are enabling systems that augment and collaborate with humans to perform simple, mechanistic tasks such as scheduling meetings and grammar-checking text. However, such human–AI collaboration poses challenges for more complex tasks, such as carrying out empathic conversations, due to the difficulties that AI systems face in navigating complex human emotions and the open-ended nature of these tasks. Here we focus on peer-to-peer mental health support, a setting in which empathy is critical for success, and examine how AI can collaborate with humans to facilitate peer empathy during textual, online supportive conversations. We develop HAILEY, an AI-in-the-loop agent that provides just-in-time feedback to help participants who provide support (peer supporters) respond more empathically to those seeking help (support seekers). We evaluate HAILEY in a non-clinical randomized controlled trial with real-world peer supporters on TalkLife (N = 300), a large online peer-to-peer support platform. We show that our human–AI collaboration approach leads to a 19.6% increase in conversational empathy between peers overall. Furthermore, we find a larger, 38.9% increase in empathy within the subsample of peer supporters who self-identify as experiencing difficulty providing support. We systematically analyse the human–AI collaboration patterns and find that peer supporters are able to use the AI feedback both directly and indirectly without becoming overly reliant on AI while reporting improved self-efficacy post-feedback. Our findings demonstrate the potential of feedback-driven, AI-in-the-loop writing systems to empower humans in open-ended, social and high-stakes tasks such as empathic conversations. AI language modelling and generation approaches have developed fast in the last decade, opening promising new directions in human–AI collaboration. An AI-in-the loop conversational system called HAILEY is developed to empower peer supporters in providing empathic responses to mental health support seekers.